Addendum

to the

Wildlife Biological Assessment/Evaluation

for the

Mount Ashland Late-Successional Reserve Habitat Restoration and Fuels Reduction Project

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Introduction
The purpose of this addendum to the biological assessment/evaluation (BA/BE) is to determine the effects of changes to the action alternatives (Section 1) and the addition of the preferred alternative (Section 2) on wildlife species listed as Endangered, Threatened, or Proposed under the Endangered Species Act; on designated Critical Habitat for those species; and on species listed as Sensitive by the Pacific Southwest Region, USDA Forest Service. Management direction, project area, action alternatives 2, 4, and 5, and species accounts are described in the original BA/BE.

This addendum is prepared in accordance with the legal requirements set forth under Section 7 of the Endangered Species Act of 1973, as amended [16 U.S.C. 1536 (c) et seq. 50CFR 402] (ESA), and follows the standards established in the FS Manual direction (FSM 2672.42; USDA Forest Service 1991).

The list of federally listed species was obtained online at http://arcata.fws.gov/specieslist (reference #430301162-112139). The FS, Region 5, Sensitive Species list was provided by the USDA Pacific Southwest Region (March 3, 2005). This addendum addresses the following species from those lists:

Endangered

Shortnose sucker (*Chamistes brevirostris*)
Lost River sucker (*Deltistes luxatus*)
Tidewater goby (*Eucyclogobius newberryi*)

Threatened

Northern spotted owl (*Strix occidentalis caurina*)
Bald eagle (*Haliaeetus leucocephalus leucocephalus*)
Marbled murrelet (*Brachyramphus marmorata*)
Vernal pool fairy shrimp (*Branchinecta lynchi*)

Sensitive

Peregrine falcon (*Falco peregrinus anatum*)
Northern goshawk (*Accipter gentiles*)
Great gray owl (*Strix nebulosa*)
Swainson's hawk (*Buteo swainsoni*)
Willow flycatcher (*Empidonax trailii*)
Greater sandhill crane (*Grus canadensis tabida*)
California wolverine (*Gulo gulo luteus*)
Pacific fisher (*Martes pennanti pacifica*)
American marten (*Martes americana*)
Sierra Nevada red fox (*Vulpes vulpes necator*)
Pallid bat (*Antrozous pallidus*)
Townsend's big-eared bat (*Corynorhinus townsendii*)
Northwestern pond turtle (*Emys marmorata marmorata*)
Foothill yellow-legged frog (*Rana boylii*)
Cascade frog (*Rana cascade*)

Southern torrent salamander (*Rhyacotriton variegates*)
Siskiyou Mountain salamander (*Plethodon stormi*)
Blue-gray taildropper slug (*Prophysaon coeruleum*)
Tehama chaparral snail (*Trilobopsis tehamana*)

Critical Habitat

Northern spotted owl, designated January 15, 1992.
Marbled murrelet, designated May 24, 1996.
Tidewater goby, designated November 20, 2000.
Vernal pool fairy shrimp, designated August 6, 2003, revised August 11, 2005.

The project is not within the range of the marbled murrelet (coastal forests), southern torrent salamander (streams within coastal forests) or the Sierra Nevada red fox (Cascades Mountains and Sierran Crest). Habitat for the Swainson's hawk (perennial grassland, grassy shrub-steppe, or agricultural landscapes), greater sandhill crane (wetlands, marshes, grasslands, or irrigated fields), shortnose and Lost River suckers (lakes and their tributaries), tide water goby (coastal lagoons, estuaries and streams a short distance from these habitats), and vernal pool fairy shrimp (seasonal wetlands that dry up in spring or summer) does not occur in the project area. Critical habitat for the marbled murrelet, tidewater goby, and vernal pool fairy shrimp does not occur in the project area. These species and designated critical habitat will not be addressed further in this document.

Background

Level 1 consultation for the Mount Ashland late-successional reserve habitat restoration and fuels reduction project (Project) was finalized with the U. S. Fish and Wildlife Service on October 10, 2007. After consultation was completed, the Klamath National Forest received comments from the public on the Draft Environmental Impact Statement which resulted in clarifications and changes to the action alternatives and the development of the preferred alternative.

Section 1. Changes to the action alternatives

This section of the addendum address changes to the action alternatives that have the potential to result in impacts to wildlife and their habitats and new information not considered in the original BA/BE. The following amendments to the BA/BE resulting from these changes and incorporation of new information are organized using the same outline as the original BA/BE (headings, sub-headings, etc.) to clearly identify the portions of that document that are being amended. All other portions in the original BA/BE are unchanged and information presented remains valid. Changes to the action alternatives and new information considered in this addendum include the following:

Defensible Fuel Profile Zones (DFPZ): Within DFPZs, snags > 20 inches dbh or groups of snags will not be felled unless hazardous to operations.

Mastication: Mastication will only occur on ≤ 35 percent slopes.

Silviculture Prescriptions: In true fir stands, red fir will be the highest priority species for retention.

Landing T9: This landing was moved to the north side of the 40S15 road.

Construction of temporary spur roads in riparian reserves: Field review indicated that the unnamed tributary of Long John Creek flows under the 40S15 road approximately 200 feet north of the proposed temporary spur road T401. Therefore, this temporary road will not cross this tributary. Field review also indicated that the riparian reserve buffer around the intermittent creek in unit 471 (Sections 2 and 3; Township 41S; Range 1W) should not extend north of the 40S14 14.2 road. Therefore, proposed temporary spur 317B will not enter a riparian reserve.

Timber Harvest Plans (THP): A new THP (North Klamath) has been proposed in Sections 5, 7, and 19 of Township 47N; Range 08W; and Sections 23 and 25 of Township 48N; Range 09W; M. D. B. & M; in Siskiyou County.

Northern spotted owl (NSO) activity centers: Based on cumulative survey results through 2007, an additional NSO activity center has been documented in the Cow Creek drainage.

Updated NSO habitat layer: Based on additional field review, the Project NSO habitat layer was updated.

Updated fisher habitat layer: Based on additional field review, the Project fisher habitat layer was updated.

For the following species changes to the action alternatives and incorporation of new information resulted in either no change or a negligible change to the effects considered and analyzed in the original BA/BE: bald eagle, peregrine falcon, northern goshawk, great gray owl, foothill yellow-legged frog, Cascade frog, willow flycatcher, California wolverine, American marten, pallid bat, Townsend's big-eared bat, and northwestern pond turtle. Therefore, changes to the action alternatives will not change the determinations made for these species in the original BA/BE and these species will not be addressed further in Section 1 of this amendment.

Northern Spotted Owl

NSOs in the Project Area

Over the past six years (2002-2007) the Project area has been extensively surveyed (Table 1). The estimated home ranges of 13 historic activity centers overlap the Project area and have actions proposed within their boundaries. The amount and quality of habitat within the core areas and home ranges is highly variable (Table 2). Existing habitat within nine of these estimated home ranges is below the level (1,336 acres) at which NSO abundance is expected to decrease and productivity is anticipated to be impaired. Additionally, eight of the core areas lack large amounts or contiguous blocks of nesting and roosting habitat.

B. Effects of the Proposed Project on NSOs

Effects to NSO Habitat

Alternatives 2, 4, and 5 – Action Alternatives

Temporary Road and Landing Construction

Temporary road and landing construction is expected to remove between three and five acres of foraging habitat. To ensure that impacts to foraging habitat are minimized, all trees greater than 24" that need to be felled for a temporary road will be left on site.

Construction of temporary roads and landings will also remove between 25 and 35 acres of dispersal habitat.

Summary

Nesting/roosting habitat will not be removed or downgraded. Between seven to nine acres of foraging habitat (approximately 0.4 percent of existing foraging habitat in the Project area) will be removed or downgraded. Additionally 25 to 30 acres of dispersal habitat (approximately 0.5 percent of existing dispersal habitat in the Project area) will be removed. Thus, impacts to NSO habitat are expected to be minimal.

Effects to Individual NSOs and Historic Activity Centers

Foraging habitat will be removed or downgraded from seven NSO home ranges that currently contain limited amounts of habitat (KL1178, KL1180, KL1188, KL1189, KL 1190, KL1310, KL 1311) (Table 2).

Cumulative Effects

Outside of the project area but within the estimated 1.3 mile home range of NSOs that overlap with project treatments there are three timber harvest plans (THP) expected to be implemented in the reasonably foreseeable future (Bumblebee, Hungry Youth, and North Klamath). The Bumblebee THP is expected to remove approximately 25–30 acres of foraging habitat from two NSO home ranges (4 acres from KL1167 and 25 acres from KL1267). Due to the extant amount of habitat in these home ranges this action is not expected to have a significant impact to NSOs. Approximately 400 acres of the Hungry Youth THP overlaps with the NSO analysis area. These acres contain roughly equal amounts of foraging and dispersal habitat. Although silvicultural prescriptions for the Hungry Youth THP have not yet been finalized, it is expected that approximately 25 percent of the THP will be in clearcut patches (Doug Staley pers. comm. 2006). Thus it is reasonable to conclude that the Hungry Youth THP would remove up to 50 acres of foraging habitat from the home range of KL1169 and up to 5 acres from the home range of KL1176. A similar amount of dispersal habitat would also be expected to be removed from these home ranges. The North Klamath THP will remove approximately 10 acres of foraging habitat from the home ranges of KL 1167 and KL 1190. Other planned projects or activities expected to occur on federal land within the Project area include ongoing pre-commercial thinning in existing plantations, grazing, and dispersed recreation. These activities are not expected to impact NSO habitat. See Table 3 for a list of reasonably foreseeable future actions used for this cumulative effects analysis.

Cumulatively, the project may impact NSOs by removing or downgrading between 94 and 99 acres of foraging habitat and 75 to 85 acres of dispersal habitat from 11 home ranges (Table 4). However, the majority of foraging habitat to be removed occurs outside of NSO core areas and in home ranges that will retain adequate amounts of suitable habitat post harvest, has low intrinsic value, or occurs in small patches. Additionally, the cumulative acres of habitat removed or downgraded represent 1.3 and 0.75 percent of extant foraging and dispersal habitat in the NSO analysis area, respectively. Due to the limited impacts to habitat, the cumulative effects are not expected to significantly impact foraging opportunities or for NSOs or create barriers to dispersal.

Effects to LSR

Temporary Road and Landing Construction

Approximately 0.15 to 0.25 mile of temporary spur road is proposed through existing late-successional stands. Thus, approximately one acre of late-successional forest, or < 0.1 percent of extant late-successional forest in the Project area will be degraded. Late-successional stands proposed to be entered include an open-canopy ridge-top stand, and two closed-canopy mixed conifer stands. These stands range in size from approximately 0.25 to 35 acres with the intervening forest consisting of predominately early- and mid-successional stands with scattered patches of late-successional stands.

Under Alternatives 2 and 4, one landing is proposed in late-successional habitat resulting in the removal of approximately 0.5 acre of late-successional habitat.

Summary

Approximately five acres of late-successional habitat will be degraded by temporary road construction and thinning to create DFPZs. An additional 0.5 acre will be removed during landing construction.

Effects to NSO Critical Habitat

Temporary Road and Landing Construction

Construction of temporary roads and landings is expected to remove small patches (0.5 acre or less) of foraging habitat totaling between 3 and 5 acres and 25 to 35 acres of dispersal habitat in 0.5 to two acre patches. These acres represent approximately 0.1 to 0.2 and 0.4 to 0.6 percent of extant foraging and dispersal habitat in the Project area, respectively.

Summary

Impacts to the primary constituent elements of critical habitat include the removal or downgrading of between seven and nine acres of foraging habitat and between 25 to 35 acres of dispersal habitat.

Cumulative Effects

Cumulatively, the project will impact CA-14 and OR-76 by removing or downgrading between seven and nine acres of foraging habitat and 25 to 35 acres of dispersal habitat. These acres

represent <0.1 and 0.5 percent of extant foraging and dispersal habitat in these CHUs, respectively. Due to the limited impacts to the primary constituent elements, the action alternatives will not significantly increase the cumulative effects to these CHUs.

C. Determination of Effects on NSO and NSO Critical Habitat

The following factors were considered in making the determination of the effects for NSOs and NSO critical habitat:

- No nesting or roosting habitat will be removed or downgraded.
- Approximately 0.4 percent of existing foraging habitat within the project area will be removed or downgraded.
- Approximately 0.5 percent of the existing dispersal habitat within the project area will be removed.
- No more than 0.5 acre of foraging habitat will be removed from any one NSO core area.
- The majority of foraging habitat to be removed occurs in the outer portion of estimated NSO home ranges, outside of the estimated breeding season home range.
- Effects to NSO prey species are expected to be minimal or of short duration.
- Project design features minimize the likelihood that NSOs will be killed or injured during project implementation or that normal breeding behaviors will be disrupted by noise or smoke.
- Impacts to the primary constituent elements of critical habitat are expected to be minimal and will not affect the nesting, roosting, foraging, and dispersal function of CA-14 and OR-76.

Based on the above factors it is my determination that the proposed project **may affect, and is not likely to adversely affect** NSOs and NSO critical habitat.

6) **Pacific Fisher**

Environmental Baseline

Within the project area mature, structurally diverse stands that provide denning and resting habitat are limited, but occur in the higher elevation true fir and mixed conifer and scattered pockets of mid-elevation mixed conifer stands. Within the high elevation true fir and mixed conifer there are approximately 500 acres of denning and resting habitat. The only contiguous block (greater than 50 acres) of denning and resting habitat occurs in the extreme northeast corner of the project area in the true fir zone. Denning and resting habitat in the mid-elevation mixed conifer zone is distributed in small patches (typically 25 acres or less) and totals approximately 800 acres. Other potential denning and resting sites occur in second growth stands where large, residual components of the original stand exist. Potential foraging habitat, in the form of forested stands with moderate to high canopy closure, is widely distributed across the Project area and occurs in larger blocks.

Effects of the proposed alternatives

Alternatives 2, 4, and 5 – Action Alternatives

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat will not remove important structural components of fisher denning or resting habitat such as large-diameter trees, snags, and DWD. Trees infected with mistletoe may be removed but silvicultural prescriptions have been designed to ensure that this habitat component will remain well distributed across the landscape. Silvicultural prescriptions have also been designed to retain 60 percent canopy cover in suitable NSO habitat. Because denning and resting habitat for fisher is a subset of suitable NSO habitat, these prescriptions will not significantly reduce canopy cover in these fisher habitats. Prescriptions for underburning have been designed to imitate low-intensity fire, thus, underburning is not expected to significantly impact the amount and distribution of large snags and DWD. Other fuel reduction treatments such as hand piling and burning of fuels and mastication will retain Mount Ashland Late-successional Reserve Assessment (MLSRA) (USDA Forest Service 1996) recommendations for snags and DWD. Because the structural elements of fisher habitat will be retained, thinning designed to promote the development of late-successional habitat and fuels reduction treatments are not expected to remove denning and resting habitat.

It is expected that fishers will avoid areas with little or no forest cover but will likely use patches of habitat if they are connected by forested stands. Because the only proposed silvicultural prescription is thinning, stands will be thinned to a variable density including 15 percent of each stand to remain unthinned, an average of 60 percent canopy closure will be retained in true fir stands and the lower half of north and east facing slopes, an average of 40 to 60 percent canopy closure will be retained on south and west facing slopes, and 60 percent canopy cover will be retained in suitable NSO habitat, thinning prescriptions designed to promote the development of late-successional habitat will not create large openings or significantly reduce forest cover and will retain a high level of habitat connectivity. Additionally, actions within one site potential tree of riparian reserves are limited to pre-commercial thinning which is not expected to affect the connectivity function of these areas.

Under Alternatives 2 and 4, thinning to create the Siskiyou Gap DFPZ would remove approximately 4 acres of denning and resting habitat in stand 339 by reducing canopy cover to 40 percent. While thinning in DFPZs may remove discrete structural components of fisher habitat outside of stand 339, silvicultural prescriptions have been designed to retain suitable NSO habitat where it occurs within DFPZs, ensuring that these activities will not remove any additional denning and resting habitat.

Temporary Road and Landing Construction

Between 0.2 to 0.3 miles of temporary road construction is proposed in fisher denning and resting habitat. Because construction of temporary roads would remove large diameter trees and create approximately a thirty foot gap in the canopy, it is expected that this activity would remove between 0.7 and 1.1 acres of denning and resting habitat and 8 to 24 acres of foraging habitat. While the construction of temporary roads will create linear openings in forested stands, research suggests that narrow roads with low traffic volume, such as logging roads, do not influence home range establishment, daily movement patterns, or use of otherwise suitable habitat (Dark 1997; Aubry and Raley 2006). Therefore, the construction and subsequent decommissioning of temporary roads is not expected to create barriers to fisher movements or measurably affect habitat connectivity. One landing is proposed to be constructed in fisher denning and resting habitat, resulting in the removal of 0.5 acre of fisher habitat.

Road-Related Activities

The implementation of the proposed treatments will result in an increase of vehicular traffic within the Project area, increasing the possibility that a fisher will be killed or injured in a vehicular collision. However, due to the inherent low density of fisher, the low rate of speed traveled by vehicles within the Project area, and because the majority of activities will occur during times of the day when fisher are less active, it is highly unlikely that fisher(s) will be killed or injured in a vehicular collision.

Cumulative Effects

The cumulative effects analysis area for fisher included the Project area plus a 1.5 to 2 mile buffer around the Project (equivalent to the Project's NSO analysis area) as well as the north zone of the Mount Ashland LSR (portion of the LSR north of the Siskiyou Crest). This analysis area was selected because it allows for a more complete analysis of effects to potential fisher home ranges that may overlap with and be impacted by Project activities and because this area could hypothetically support a small localized population of 7 or more individuals.

The Project area is predominately federal lands with small in-holdings of private ownership. Much of the project area is bounded by industrial timber lands. Prior to European settlement the majority of the Beaver Creek watershed, which includes the Project area, was late-successional mixed conifer forest. During the railroad logging era (1910 – 1932) the Project area was privately owned and was extensively harvested – an estimated 90 percent of the trees within the Project area were removed. During this era pine was the preferred species with the largest trees on the landscape being targeted for removal. Thus, at the conclusion of the railroad logging era fisher habitat in the Project area was limited to higher elevation true fir stands and scattered pockets of mixed conifer at lower elevations. After acquiring much of the railroad logged area in land exchanges, the KNF conducted partial cuts during the 1950s – 1970s, further contributing to changes in distribution and abundance of fisher habitat. Similar to railroad logging, KNF partial cuts primarily targeted large trees but did not focus on pine. Although the extent of impacts to fisher habitat on the small in-holdings of privately owned lands within the Project area is unknown, it is expected that important components of fisher habitat have been removed.

The majority of land within the buffer around the Project area (approximately 28,000 acres) is owned by industrial timber companies or managed by the KNF. Federally owned lands in this zone have also been impacted by railroad logging and/or KNF partial cuts. Industrial timber company lands in this zone have been and continue to be actively managed. While it is difficult to quantify the actual impacts to fisher habitat, it is reasonable to conclude that past and current timber management on these lands has reduced the abundance and distribution of fisher habitat. Currently there is approximately 1,950 acres of fisher denning and resting habitat in the buffer area surrounding the Project area.

Primarily because a large portion is allocated as the Ashland watershed, timber harvest in the north zone of the LSR has been relatively limited (USDA Forest Service 1996). Within the Ashland watershed, timber harvest has been limited to small clear cuts adjacent to the 2060 road, thinning to create shaded fuelbreaks, individual and small group selection to reduce fire hazard, and roadside salvage. To the east and west of the Ashland watershed, harvest has been more

extensive and impacts to fisher habitat have likely been greater. According to the MLSRA, there were approximately 8,370 acres of late-successional habitat in the north zone in 1996 (USDA Forest Service 1996). Because the above description of fisher denning and resting habitat closely resembles late-successional habitat as defined in the MLSRA (structurally complex stands with canopy closure usually greater than 60 percent, and average stem diameter greater than 24 inches below 5000 feet with smaller average tree diameter [$\leq$ 24 inches] and less understory above 5000 feet), and there has not been any measurable loss of late-successional habitat since 1996, the MLSRA account of late-successional habitat represents a reasonable approximation of the extent and distribution fisher habitat in the north zone of the LSR. Therefore, it is estimated that there is approximately 11,600 acres of fisher denning and resting habitat in the fisher analysis area (3,250 acres in the NSO analysis area and 8,370 acres in the north zone of the LSR).

Reasonably foreseeable future actions within the Project area include small scale timber harvest on private lands. Based on aerial photo interpretation, fisher denning and resting habitat do not appear to occur in these areas. In the buffer zone surrounding the Project area, three timber harvest plans (THP), Bumblebee, Hungry Youth, and North Klamath are proposed. Harvest units within these THPs generally lack the mature, structurally complex stands typical of fisher denning sites, however, some structure that is suitable for resting bouts will likely be removed. Because significant portions of these plans are to be clearcut or harvested using a shelterwood prescription, it is expected that approximately 110 acres of fisher foraging habitat will be removed. Despite these impacts, foraging habitat will remain well distributed in this zone. Other federal projects or activities planned in the Project area and the buffer surrounding the Project include ongoing pre-commercial thinning in existing plantations, grazing, and dispersed recreation. These activities are not expected to impact fisher habitat.

In the north zone of the Mount Ashland LSR, reasonably foreseeable future actions include the Ashland Watershed Protection Project, the Mt. Ashland Ski Area Expansion, and the Ashland Forest Resiliency Project. The Ashland Watershed Protection Project and the Mt. Ashland Ski Area Expansion could remove up to 24 acres and 37 acres of late-successional habitat, respectively. While these projects will likely remove habitat suitable for fisher denning, resting, and foraging they are not expected to create barriers to fisher movement. The Ashland Forest Resiliency Project is designed to restore more fire resilient forests in the Ashland watershed by implementing several types of hazardous fuel treatments. Primarily through a reduction in canopy closure, approximately 1,000 acres of fisher denning, resting, and/or foraging habitat will be removed or degraded with the implementation of this project. Because fisher home range size is likely indicative of habitat quality, activities that remove or degrade habitat could impact fisher by increasing the size of or causing a shift in existing home ranges.

Cumulatively, reasonably foreseeable future actions will impact fisher by reducing the quality and/or quantity of available denning, resting, and foraging habitat and by fragmenting existing habitat. However, these effects are not expected to significantly impact the viability of the local fisher population in the analysis area because less than 9 percent of existing denning and resting habitat will be impacted, and denning and resting habitat will remain well distributed across the northern portion of the LSR. Additionally, foraging habitat will remain abundant and well distributed throughout the analysis area and no barriers to fisher movement are expected as a

result of these actions. Because Project activities are expected to have negligible impacts to fisher habitat and not affect habitat connectivity, these actions are not expected to measurably impact the viability of fisher in the Project area. Therefore, Project activities would not measurably contribute to loss of fisher population viability at larger scales regardless of other reasonably foreseeable future actions.

Determination
Because the action alternatives will remove potential denning, resting, and foraging habitat, the project **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability,"** for fisher.

13) **Blue-gray taildropper**
Temporary Road and Landing Construction
Under alternatives 2 and 4, one landing is proposed in potential blue-gray taildropper habitat. If surveys indicate that this habitat is occupied, this landing will be relocated.

Determination
Because temporary roads may create short term barriers to dispersal, the project **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability,"** for the bluegray taildropper.

14) **Tehama chaparral snail**
Temporary Road and Landing Construction
Temporary road and landing construction is not proposed within or adjacent to potential Tehama chaparral habitat.

Determination
Because thinning and fuels reduction treatments may remove habitat components, the action alternatives **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability,"** for the Tehama chaparral snail.

15) **Siskiyou Mountains salamander**
Temporary Road and Landing Construction
Temporary road and landing construction is not proposed in potential Siskiyou Mountains salamander habitat.

Determination
The project will have **"no effect"** on Siskiyou Mountain salamanders.

SUMMARY OF DETERMINATIONS FOR ALL SPECIES

Species:	**Determination of Effects**
Northern spotted owl	May affect, and is not likely to adversely affect
NSO critical habitat	May affect, and is not likely to adversely affect
Bald eagle	No effect
Shortnose sucker	No effect; no habitat in project area
Lost River sucker	No effect; no habitat in project area

Species:	Determination of Effects
Tidewater goby	No effect; no habitat in project area
Tidewater goby critical habitat	Outside of range
Vernal pool fairy shrimp	No effect; no habitat in project area
Vernal pool fairy shrimp critical habitat	Outside of range
Peregrine falcon	No effect
Northern goshawk	No effect
Great gray owl	No effect
Willow flycatcher	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
California wolverine	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Pacific fisher	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
American marten	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Pallid bat	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Townsend's big-eared bat	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Northwestern pond turtle	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Foothill yellow-legged frog	No effect
Cascade frog	No effect
Blue-gray taildropper	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Tehama chaparral	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Siskiyou Mountains salamander	No effect
Marbled murrelet	Outside of range
Marbled murrelet critical habitat	Outside of range
Swainson's hawk	No effect; no habitat in project area
Greater sandhill crane	No effect; no habitat in project area
Southern torrent salamander	Outside of range
Sierra Nevada red fox	Outside of range

Section 2. The Preferred Alternative

This section addresses impacts to wildlife and their habitats from the implementation of the preferred alternative. This alternative is a modification of Alternative 5. Activities proposed under this alternative are listed below.

(a) Primary Elements of the preferred alternative:

- **Restoration Thinning to Promote the Development of Late-successional Stands**: This treatment is proposed in early- and mid-successional stands and is designed to promote the development of late-successional habitat. This treatment includes variable density thinning of trees from 9 to 20" dbh on 2,543 acres containing mid-successional stands and thinning of trees less than 9" on 408 acres of

plantations and naturally regenerated stands. Restoration thinning includes felling and yarding of merchantable trees using helicopter, cable, and ground based systems.

- **Thinning to Create Defensible Fuel Profile Zones:** This treatment is proposed along upper slopes and ridges and is designed to break up the continuity of existing fuels and provide an anchor point for fire suppression and prescribed burning activities. The focus of this treatment will be variable density thinning of small diameter trees to control density and will favor the shade-intolerant, fire resistant species. Large snags >20" dbh or groups of snags will only be felled if hazardous to operations. Thinning to create DFPZs includes felling and yarding of merchantable trees using helicopter, cable, and ground based systems and will occur on 1,058 acres.

- **Weeding and Cleaning**: This treatment consists of thinning small diameter understory trees within the habitat promotion and DFPZ stands. Thinning will occur as needed to meet Project objectives on a stand by stand basis.

- **Fuels Reduction Treatments**: Within thinned stands these treatments include mastication of activity generated and natural fuels on 995 acres, handpiling and burning of activity-generated and natural fuels 566 acres, and underburning to reduce activity-generated and natural fuels on 2,056 acres. Outside of thinned stands approximately 1,453 acres will be underburned to reduce ground and ladder fuels. Thinning of small diameter understory trees followed by handpiling and burning of surface fuels will also occur on an additional 303 acres with riparian reserves.

- **Support Actions**: These activities include modification of existing landings to accommodate processing of small trees for biomass utilization, construction of 43 new landings, construction of eight temporary spur roads totaling 1.7 miles, road closures, road decommissioning, road maintenance, and designating existing unauthorized roads as National Forest System Roads.

(b) Timing of the Project

- Silvicultural treatments will commence upon signing of the Record of Decision and may take up to 5 years to complete.
- Fuels treatments will occur approximately 3-5 years after silvicultural treatments are completed.

(c) Project Design Features: Northern spotted owl

All project design features for NSOs documented in the original BA/BE will apply to the preferred alternative.

Species accounts and their existing environments have been addressed in the original BA/BE and in Section 1 of this addendum.

Northern Spotted Owl

B. Effects of the Proposed Project on NSOs

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat and fuels reduction treatments will have similar effects to NSO habitat and NSO prey as discussed for alternatives 2, 4, and 5 in the original BA/BE. Thinning to create DFPZs has the potential to impact NSO habitat by removing large-diameter trees (>20 inches), snags, and DWD. However, the removal of large-diameter trees would only occur under very limited circumstances when it is necessary to meet stand density objectives or if a tree shows obvious signs of disease or poor vigor. Additionally, prescriptions for thinning in DFPZs have been designed to meet the canopy retention requirements for NSO habitat when it occurs within a DFPZ and to avoid the creation of large canopy gaps. Therefore, the number of large trees to be removed is expected to be minimal and would not change the function of any stands (i.e., stands that provide foraging habitat would continue to provide foraging habitat post harvest). Also, the incorporation of MLSRA recommendations for snags and DWD and by limiting the felling of snags > 20 inches or groups of snags to situations where they pose a hazard to operations, will ensure that these habitat components are retained.

Over time, the beneficial effects of the proposed thinning and fuels reduction treatments to NSO habitat are expected to be similar to those discussed for alternatives 2, 4, and 5 in the original BA/BE.

Temporary Road and Landing Construction

No temporary road or landing construction is proposed in nesting or roosting habitat. Construction of temporary roads and landings is expected to remove 3.3 acres of foraging habitat in ≤0.5 acre patches and 16 acres of dispersal habitat in 0.5 to two acre patches. These acres represent approximately 0.12 and 0.27 percent of extant foraging and dispersal habitat in the Project area, respectively. Because large DWD is an important structural component of NSO habitat and is generally lacking in the Project area, all trees >24 inches that need to be felled for a temporary road will be left on site.

Road-Related Activities

Road related activities will have similar effects to NSO habitat as discussed for alternatives 2, 4, and 5 in the original BA/BE.

Effects to Individual NSOs and Historic Activity Centers

Seasonal restrictions for proposed activities have been discussed in the original BA/BE. No nesting/roosting habitat will be removed. Construction of temporary roads and landings will remove foraging habitat from seven NSO home ranges that currently contain limited amounts of habitat (KL1178, KL1180, KL1188, KL1189, KL 1190, KL1310, and KL 1311) (Table 5). However, only 0.5 acre of foraging habitat would be removed from any one NSO core area and between 0.5 and 2.25 acres would be removed or downgraded from any one NSO home range. These acres represent <0.1 to approximately 0.35 percent of the extant suitable habitat within these NSO core areas and home ranges, respectively. Therefore, because patches of foraging habitat to be removed are small, impacts to foraging habitat are dispersed across the Project area, and most of the foraging habitat to be removed occurs in the outer portion of any given home

range, the removal and downgrading of foraging habitat is not expected to impact foraging opportunities for NSOs in the Project area. Construction of temporary roads and landings will also remove 16 acres of dispersal habitat. Due to the amount of existing dispersal habitat within the Project area the removal of 16 acres of dispersal habitat is not expected to create any dispersal barriers to NSOs.

Cumulative Effects

Actions contributing to the cumulative effects for NSOs were disclosed for alternatives 2, 4, and 5 in the original BA/BE and in the changes to the action alternatives section of this report. The preferred alternative will have similar effects as discussed for alternatives 2, 4, and 5 in the changes to the action alternatives section of this report but will remove five to six fewer acres of foraging habitat and nine to 19 fewer acres of dispersal habitat.

Effects to LSR

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat and fuels reduction treatments will have similar effects to late-successional habitat as discussed for alternatives 2, 4, and 5 in the original BA/BE. Thinning to create DFPZs may remove large diameter trees, snags, and DWD. However, the removal of large-diameter trees would only occur under very limited circumstances (see FEIS chapter 2.3.1.2) (USDA Forest Service 2008). Additionally, the incorporation of MLSRA recommendations for snags and DWD and by limiting the felling of snags > 20 inches or groups of snags to situations where they pose a hazard to operations, will ensure that these habitat components are retained. Thus, thinning to create DFPZs is not expected to significantly impact late-successional habitat.

Temporary Road and Landing Construction

Approximately 0.12 mile of temporary spur road is proposed through existing late-successional stands. Thus, approximately 0.5 acres of late-successional forest, or < 0.1 percent of extant late-successional forest in the Project area will be degraded. Late-successional stands proposed to be entered are closed-canopy mixed conifer stands ranging in size from approximately 0.25 to 35 acres. A sample inventory of stands within the Project area indicated that DWD > 24 inches is very limited (T. Laurent, pers. comm. 2006). Therefore, because large DWD is an important structural component of LSRs, all trees >24 inches that need to be felled for a temporary road will be left on site. Construction of temporary roads will have similar effects to LSR function as discussed for alternatives 2, 4, and 5 in the original BA/BE.

One landing is proposed in late-successional habitat, resulting in the removal of 0.5 acre of late-successional habitat.

Summary:

Approximately 0.5 acre of late-successional forest will be removed and 0.5 acre degraded from the construction of temporary roads and landings. At the scale of the LSR, these acres are insignificant relative to LSR function. Thus, the project is not expected to impact connectivity of late-successional forest or the ability of this LSR to provide a functional, interactive, late-successional and old-growth forest.

Effects to NSO Critical Habitat

Thinning and Fuels Reduction

Thinning designed to promote the development of late-successional habitat and the primary constituent elements of NSO critical habitat, and fuels reduction treatments, will have similar effects to existing NSO habitat as discussed for alternatives 2, 4, and 5 in the original BA/BE. Thinning to create DFPZs may remove discrete components of NSO critical habitat such as large diameter trees and snags. However, the removal of large-diameter trees would only occur under very limited circumstances. Additionally, the incorporation of MLSRA recommendations for snags and DWD and by limiting the felling of snags > 20 inches dbh or groups of snags to situations where they pose a hazard to operations, ensure that these habitat components will be retained. Silvicultural prescriptions have also been designed to ensure that the DFPZs will not result in large canopy gaps and to meet the canopy retention requirements for NSO habitat when it occurs within a DFPZ. Although some structural components of critical habitat may be reduced with the above actions, when assessed at the stand scale, effects are not expected to remove habitat or change its function (i.e., stands providing foraging habitat will remain foraging quality post treatment).

Over time, the beneficial effects of the proposed thinning and fuels reduction treatments to NSO critical habitat are expected to be similar to those discussed for alternatives 2, 4, and 5 in the original BA/BE.

Temporary Road and Landing Construction

Temporary road or landing construction is not proposed in nesting or roosting habitat. Construction of temporary roads and landings is expected to remove 3.3 acres of foraging habitat in 0.5 acre or less patches and 16 acres of dispersal habitat in 0.5 to two acre patches. These acres represent approximately 0.12 and 0.27 percent of extant foraging and dispersal habitat in the Project area, respectively. Because large DWD is an important structural component of NSO critical habitat and is generally lacking in the Project area, all trees >24 inches that need to be felled for a temporary road will be left on site. Because patches of foraging and dispersal habitat to be removed are small, impacts to these habitats are dispersed across the Project area, and the total acres of habitat to be removed is minimal, these actions are not expected to impact the ability of CA-14 and OR-76 to provide foraging opportunities for NSOs or create barriers to dispersal.

Road-Related Activities

Road related activities will have similar effects to NSO critical habitat as discussed for alternatives 2, 4, and 5 in the original BA/BE.

Cumulative Effects

Actions contributing to cumulative effects for NSO critical habitat were disclosed for alternatives 2, 4, and 5 in the original BA/BE. Cumulatively, the Project will impact CA-14 and OR-76 by removing 3.3 acres of foraging habitat and 16 acres of dispersal habitat. These acres represent <0.1 percent and 0.11 of extant foraging and dispersal habitat in these CHUs, respectively. Due to the limited impacts to the primary constituent elements, the preferred alternative will not significantly increase the cumulative effects to these CHUs.

C. Determination of Effects on NSO and NSO Critical Habitat

The following factors were considered in making the determination of the effects for NSOs and NSO critical habitat:

- No nesting or roosting habitat will be removed or downgraded.
- Less than 0.2 percent of existing foraging habitat within the project area will be removed or downgraded.
- Less than 0.3 percent of the existing dispersal habitat within the project area will be removed.
- No more than 0.5 acre of foraging habitat will be removed from any one NSO core area.
- The majority of foraging habitat to be removed occurs in the outer portion of estimated NSO home ranges, outside of the estimated breeding season home range.
- Effects to NSO prey species are expected to be minimal or of short duration.
- Project design features minimize the likelihood that NSOs will be killed or injured during project implementation or that normal breeding behaviors will be disrupted by noise or smoke.
- Impacts to the primary constituent elements of critical habitat are expected to be minimal and will not affect the nesting, roosting, foraging, and dispersal function of CA-14 and OR-76.

Based on the above factors it is my determination that the preferred alternative **may affect, and is not likely to adversely affect** NSOs and NSO critical habitat.

2) **Bald Eagle**

Habitat for the bald eagle does not occur in the Project area. Therefore, effects of the preferred alternative to bald eagles are the same as described for the action alternatives in the original BA/BE.

Determination

The preferred alternative will have **"no effect"** on bald eagles.

FOREST SERVICE REGION FIVE SENSITIVE SPECIES

1) **Peregrine Falcon**

Habitat for the peregrine falcon does not occur in the Project area. Therefore, effects of the preferred alternative to peregrine falcons are the same as described for the action alternatives in the original BA/BE.

Determination

The preferred alternative will have **"no effect"** on peregrine falcons.

2) **Northern Goshawks**

Habitat retention standards for northern goshawks will be the same as described in the original BA/BE. Therefore, effects of the preferred alternative to northern goshawks are the same as described for the action alternatives in the original BA/BE.

Determination
The preferred alternative will have **"no effect"** on northern goshawks.

3) **Great Gray Owls**
Thinning and Fuels Reduction
Thinning and fuels reduction treatments are proposed in approximately 25 to 35 acres of potential GGO nesting and foraging habitat. These treatments will have similar effects to GGO as discussed for alternatives 2, 4, and 5 in the original BA/BE. To avoid the possibility of injuring or killing nestlings or recently fledged owlets or disturbing adults during the breeding season, a seasonal restriction of March 1st to July 31st will apply to all thinning and fuels reduction activities that are proposed within 0.25 mile of GGO habitat (stands 476, 477, and 700-702).

Because suitable habitat for GGOs will not be removed, seasonal restrictions to protect nestlings and owlets and breeding activities of adults will be implemented, incorporation of MLSRA recommendations for large snags will ensure that nesting structure is retained, and the limited number of acres of suitable habitat to be entered, thinning and fuels reduction treatments will have no adverse effect to GGOs.

Temporary Road and Landing Construction
No temporary road or landing construction is proposed in GGO habitat.

Road-Related Activities
Road-related activities will not impact GGO habitat.

Cumulative Effects

The preferred alternative will have no effect on GGOs; therefore there will be no cumulative effects from the preferred alternative combined with other actions in the analysis area.

Determination
The preferred alternative will have **"no effect"** on great gray owls.

4) **Willow Flycatcher**
Thinning and Fuels Reduction
Thinning designed to promote the development of late-successional habitat will have similar effects to willow flycatchers as discussed for alternatives 2, 4, and 5 in the original BA/BE. Although prescribed fire will not be ignited within riparian reserves, underburns will be allowed to back into them. Thus, an unknown but potentially appreciable amount of willow flycatcher habitat may be underburned. Potential impacts include the removal of habitat or if underburning occurs in the spring, disturbing normal breeding activities. Because underburns are designed to imitate low intensity fire and shrubs such as willow and alder often become established following a disturbance (Petrides 1992), any impacts to willow flycatcher habitat are expected to be short term. Additionally, it is expected that a significant portion of the underburns will occur in fall, outside of the willow flycatcher breeding season.

Temporary Road and Landing Construction

No temporary road or landing construction is proposed in suitable willow flycatcher habitat.

Road-Related Activities
Road decommissioning may impact small, discrete patches of habitat but is not expected to result in a significant reduction of habitat.

Cumulative Effects
Actions contributing to the cumulative effects for willow flycatchers were discussed in the original BA/BE. The preferred alternative has the potential to underburn considerably more acres of willow flycatcher habitat than was addressed in that report. Cumulatively, the impacts of underburning and grazing are not expected to have a significant on willow flycatcher habitat because grazing allotments limit the number of livestock in the area and impacts from underburning are expected to be minimal or of short duration.

Determination
Because fuel reduction treatments and road decommissioning may remove habitat or disrupt breeding activities, the preferred alternative **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability"** for willow flycatcher.

5) **Wolverine**

Thinning and Fuels Reduction

Thinning in DFPZs and fuels reduction treatments may remove individual snags or large DWD that may be used for cover or denning. However, by incorporating MLSRA recommendations for these habitat components and by limiting the felling of snags > 20 inches dbh or groups of snags to situations where they pose a hazard to operations, impacts to wolverine habitat are expected to be negligible. Thinning and fuels reduction activities will employ heavy machinery and may require repeated visits to a site. Because wolverines are sensitive to human disturbance, these activities will likely prevent wolverines from using the Project area during implementation. Thus, normal movement patterns or foraging activities may be disrupted.

Temporary Road and Landing Construction
Temporary road and landing construction may remove individual snags or large DWD that may be used for cover or denning. At the scale of a wolverine's home range, these impacts to habitat are expected to be negligible. However, temporary road and landing construction will employ heavy machinery that will create noise above ambient levels and increase the likelihood that wolverines will avoid the area.

Road-Related Activities
Road-related activities are not expected to remove suitable habitat but will employ heavy machinery and increase the likelihood that wolverines will avoid the area.

Cumulative Effects
Actions contributing to the cumulative effects for wolverines were disclosed in the original BA/BE. The preferred alternative will treat approximately 1,000 more acres than was addressed in that report. By introducing a large amount of human disturbance on the landscape, cumulative actions may preclude the use of portions of the Project area by wolverines.

Determination
The amount of human disturbance associated with implementation of the preferred alternative may impact normal movement patterns and foraging behavior, thus, the project **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability,"** for California wolverines.

6) **Pacific Fisher**
Thinning and Fuels Reduction
Thinning designed to promote the development of late-successional habitat and fuels reduction treatments will have similar effects to pacific fisher habitat and their prey as discussed for alternatives 2, 4, and 5 in the original BA/BE and in the changes to the action alternatives section of this report. Thinning to create DFPZs may impact fisher habitat by removing large-diameter trees (>20 inches), snags, and DWD. However, the removal of large-diameter trees would only occur under limited circumstances, the removal of large snags or groups of snags will be limited to situations where they pose a hazard to operations, and where consistent with DFPZ objectives large-diameter DWD will be retained. Thinning prescriptions are also designed to minimize habitat fragmentation and to ensure that the DFPZs will not result in large canopy gaps. Therefore, impacts to the distribution and abundance of potential denning and rest sites and habitat connectivity are expected to be minimal.

Temporary Road and Landing Construction
Approximately 0.2 mile of temporary road construction is proposed in fisher denning and resting habitat. Because construction of temporary roads would remove large diameter trees and create approximately a thirty foot gap in the canopy, it is expected that this activity would remove approximately 0.7 acres of denning and resting habitat and 5.5 acres of foraging habitat. While the construction of temporary roads will create linear openings in forested stands, research suggests that narrow roads with low traffic volume, such as logging roads, do not influence home range establishment, daily movement patterns, or use of otherwise suitable habitat (Dark 1997; Aubry and Raley 2006). Therefore, the construction and subsequent decommissioning of temporary roads is not expected to create barriers to fisher movements or measurably affect habitat connectivity. One landing is proposed to be constructed in fisher denning and resting habitat, resulting in the removal of 0.5 acre of fisher habitat.

Road-Related Activities
Road related activities will have similar effects to Pacific fisher as discussed for alternatives 2, 4, and 5 in the original BA/BE and in the changes to the action alternatives section of this report.

Cumulative Effects
Actions contributing to cumulative effects for fisher were disclosed in the original BA/BE and in the changes to the action alternatives section of this report. The preferred alternative is expected to have negligible impacts to fisher habitat and is not expected to measurably impact the viability of fisher in the Project area. Therefore, effects to fisher and their habitat within the Project area would not measurably contribute to loss of fisher population viability at larger scales regardless of other reasonably foreseeable future actions.

Determination
Because the preferred alternative will remove potential denning, resting, and foraging habitat, the project **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability,"** for fisher.

7) **American Marten**
Thinning and Fuels Reduction
Thinning and fuels reduction treatments are not proposed in American marten denning and resting habitat.

Temporary Road and Landing Construction

No temporary road or landing construction is proposed in marten habitat.

Road-Related Activities

Road-related activities are not expected to impact marten habitat.

Cumulative Effects
The Project will have no effect on American marten; therefore there will be no cumulative effects from the preferred alternative combined with other actions in the analysis area.

Determination
The preferred alternative will have **"no effect"** on American martens.

8) **Pallid Bat** and 9) **Townsend's Bid-eared Bat**
Thinning and Fuels Reduction
Thinning designed to promote the development of late-successional habitat will not remove individual large trees or snags that may be used for roosting. Thinning to create DFPZs and fuels reduction treatment will have similar effects to these species as discussed for alternatives 2, 4, and 5 in the original BA/BE.

Temporary Road and Landing Construction
Temporary road and landing construction may remove individual large trees that may be used as roost sites. Additionally, these activities may occur adjacent to possible roost sites, increasing the potential to disrupt roosting behavior.

Road-Related Activities
Road-related activities are not expected to remove suitable habitat but may occur adjacent to potential roost sites.

Cumulative Effects

Actions contributing to cumulative effects for these species were disclosed in the original BA/BE. The preferred alternative will treat approximately 1,000 more acres than was addressed in that report, increasing the potential to disturb occupied roost sites.

Determination
Because large trees and snags that provide potential roost sites may be removed and activities with the potential to disturb roost sites are proposed, the preferred alternative **"may impact**

individuals, but is not likely to result in a trend toward federal listing or a loss of viability," for the pallid bat and the Townsend's big-eared bat.

10) **Northwest Pond Turtle**

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original BA/BE.

Temporary Road and Landing Construction

No temporary roads or landings are proposed adjacent to the holding pond.

Road-Related Activities

No road-related activities are proposed adjacent to the holding pond.

Cumulative Effects

Actions contributing to cumulative effects for northwestern pond turtles were discussed in the original BA/BE. Cumulatively, these effects combined with the preferred alternative would not significantly impact northwestern pond turtle populations.

Determination

Because thinning and fuels reduction activities that have the potential to kill or injure overwintering or nesting turtles are proposed within 600 feet of the holding pond, the project **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability,"** for the northwestern pond turtle.

11) **Foothill Yellow-legged Frog**

Breeding habitat for the foothill yellow-legged frog does not occur in the Project area. Therefore, effects of the preferred alternative to foothill yellow-legged frogs are the same as described for the action alternatives in the original BA/BE.

Determination

The preferred alternative will have **"no effect"** on foothill yellow-legged frogs .

12) **Cascade Frog**

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original BA/BE.

Temporary Road and Landing Construction

No temporary roads or landings are proposed adjacent to the holding pond.

Road-Related Activities

No road-related activities are proposed adjacent to the holding pond.

Cumulative Effects
The preferred alternative will have no effect on Cascades frogs; therefore, there will be no cumulative effects from the proposed alternatives combined with other actions in the Project area.

Determination
The preferred alternative will have **"no effect"** on Cascade frogs .

Blue-gray Taildropper

Thinning and Fuels Reduction

Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original BA/BE.

Temporary Road and Landing Construction

Approximately 300 feet of temporary road construction is proposed in potential blue-gray taildropper habitat. Temporary road construction will have similar effects as discussed for alternatives 2, 4, and 5 in the original BA/BE. One landing is proposed in potential blue-gray taildropper habitat. If surveys indicate that this habitat is occupied, this landing will be relocated.

Road-Related Activities

Road-related activities are not expected to impact blue-gray taildropper habitat.

Cumulative Effects

Actions contributing to the cumulative effects for blue-gray taildroppers were disclosed in the original BA/BE. Cumulatively, these effects combined with the preferred alternative would not significantly impact blue-gray taildropper habitat.

Determination
Because temporary roads may create short term barriers to dispersal, the preferred alternative **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability,"** for the bluegray taildropper.

14) **Tehama chaparral**
Thinning and Fuels Reduction
Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original BA/BE.

Temporary Road and Landing Construction
Construction of temporary roads and landings is not proposed within or adjacent to Tehama chaparral habitat.

Road-Related Activities
Road-related activities are not expected to impact Tehama chaparral habitat.

Cumulative Effects

Actions contributing to cumulative effects for the Tehama chaparral snail were discussed in the original BA/BE. Cumulatively, these effects combined with the preferred alternative would not significantly impact Tehama chaparral habitat.

Determination
Because thinning and fuels reduction treatments may remove habitat components, the preferred alternative **"may impact individuals, but is not likely to result in a trend toward federal listing or a loss of viability,"** for the Tehama chaparral snail.

15) **Siskiyou Mountains salamander**
Thinning and Fuels Reduction
Thinning and fuels reduction treatments will have similar effects as discussed for alternatives 2, 4, and 5 in the original BA/BE.

Temporary Road and Landing Construction
Construction of temporary roads and landings is not proposed within or adjacent to Siskiyou Mountains salamander habitat.

Road-Related Activities
Road-related activities are not expected to impact Siskiyou Mountains salamander habitat.

Cumulative Effects
The preferred alternative will have no effect on Siskiyou Mountains salamanders; therefore, there will be no cumulative effects from the proposed alternatives combined with other actions in the Project area.

Determination
The project will have **"no effect"** on Siskiyou Mountain salamanders.

VII. PREFERRED ALTERNATIVE SUMMARY OF DETERMINATIONS FOR ALL SPECIES

Species:	Determination of Effects
Northern spotted owl	May affect, and is not likely to adversely affect
NSO critical habitat	May affect, and is not likely to adversely affect
Bald eagle	No effect
Shortnose sucker	No effect; no habitat in project area
Lost River sucker	No effect; no habitat in project area
Tidewater goby	No effect; no habitat in project area
Tidewater goby critical habitat	Outside of range
Vernal pool fairy shrimp	No effect; no habitat in project area
Vernal pool fairy shrimp critical habitat	Outside of range
Peregrine falcon	No effect
Northern goshawk	No effect
Great gray owl	No effect
Willow flycatcher	May impact individuals, but not likely to lead to a trend

Species:	Determination of Effects
	toward Federal listing or loss of viability
California wolverine	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Pacific fisher	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
American marten	No effect
Pallid bat	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Townsend's big-eared bat	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Northwestern pond turtle	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Foothill yellow-legged frog	No effect
Cascade frog	No effect
Blue-gray taildropper	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Tehama chaparral	May impact individuals, but not likely to lead to a trend toward Federal listing or loss of viability
Siskiyou mountains salamander	No effect
Marbled murrelet	Outside of range
Marbled murrelet critical habitat	Outside of range
Swainson's hawk	No effect; no habitat in project area
Greater sandhill crane	No effect; no habitat in project area
Southern torrent salamander	Outside of range
Sierra Nevada red fox	Outside of range

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Table 1. 2002-2007 survey results for NSO activity centers whose estimated home ranges overlap the Mount Ashland Habitat Restoration and Fuels Reduction Project area and have actions proposed within their boundaries.

Activity Center #	Name	2002	2003	2004	2005	2006	2007
KL1167 (SK102)	Deer Cr.	M	M	NS	M	M	M
KL1169 (SK291)	N. Hungry Cr.	NR	NR	NS	NS	NS	NR
KL1176 (SK041)	S. Cottonwood Cr.	NS	NS	NS	NR	NR	NS
KL1178 (SK220)	Grouse Cr.	NR	P/UN	NS	M	P/Non	MF
KL1180 (SK101)	Cow Cr./Long John Cr.	P/J1	P/J2	NS	M	P/J2	P/NF
KL1185 (SK307)	Upper Grouse Cr.	NR	NS	M	M	M	P/J1
KL1188 (SK308)	W. Branch Long John	NR	NR	NS	NS	NR	NR
KL1189	Long John	NR	NR	NS	NS	P/Non	MF
KL 1190	Lower Cow Cr.	NR	NR	NS	NS	M	M
KL1267 (SK449)	Fly Stain Cr.	P/UN	NR	NS	NR	NR	M
KL1297 (SK320)	N. Cottonwood Cr.	P/Non	M	P/Non	P/Non	M	P/Non
KL1310 (SK501)	Lower Grouse Cr.	P/UN	M	NS	NR	P/J2	P/J2
KL1311 (SK529)	W. Fork Big Red Mtn.	P/J2	NR	NS	NS	P/J2	P/J2

M: single male; F: single female; P/UN: pair, nesting status unknown; P/Non: non-nesting pair; P/J1: pair with one juvenile; P/NF: pair nesting but failed to produce young; NR: surveyed, no response; NS: not surveyed

Table 2. Acres of suitable habitat pre- and post treatment (alternative 2) within core areas and home ranges of NSOs located within 1.3 miles of the Mt. Ashland Habitat Restoration and Fuels Reduction Project stands.

Activity Center #	Name	Pre-treatment Core (0–0.7mi)			Pre-treatment Home Range (0–1.3 mi)			Habitat Removed/downgraded Core (0–0.7mi)		Habitat Removed/ downgraded Home Range (0–1.3mi)	
		NR	F	Total	NR	F	Total	NR	F	NR	F
KL1167 (SK102)	Deer Cr.	34	405	439	390	1222	1612	0	0	0	0.5
KL1169 (SK291)	N. Hungry Cr.	115	659	774	276	1831	2107	0	0	0	1
KL1176 (SK041)	S. Cottonwood Cr.	69	610	679	319	1499	1818	0	0	0	0
KL1178 (SK220)	Grouse Cr.	16	295	311	45	722	767	0	0.5	0	0.7
KL1180 (SK101)	Cow Cr./Long John Cr.	23	211	234	154	671	825	0	0.5	0	2.5
KL1185 (SK307)	Upper Grouse Cr.	79	209	288	85	489	574	0	0	0	0
KL1188 (SK308)	W. Branch Long John	15	135	150	26	384	410	0	0	0	4
KL1189	Long John	2	130	132	17	547	564	0	0	0	6
KL 1190	Lower Cow Cr.	121	240	361	303	715	1018	0	0	0	.75
KL1267 (SK449)	Fly Stain Cr.	256	460	716	400	1634	2034	0	0.5	0	0.5
KL1297 (SK320)	N. Cottonwood Cr.	138	161	299	390	776	1166	0	0	0	0
KL1310 (SK501)	Lower Grouse Cr.	7	193	200	116	1149	1265	0	0.2	0	1.2
KL1311 (SK529)	W. Fork Big Red Mtn.	151	85	236	595	390	985	0	0	0	2

Table 3. Reasonably foreseeable future actions considered for NSO cumulative effects analyses for the Mount Ashland Habitat Restoration and Fuels Reduction Project.

THP Name and/or Landowner	Year	Type of Action	Acres[1]	Location
Caswell	Unknown	Timber Harvest	unknown	T41S; R1E; Section 18
Caswell	Unknown	Timber Harvest	unknown	T41S; R1E; Section 8
Caswell	Unknown	Timber Harvest	unknown	T41S; R1W; Section 13
Bumblebee	2007	Timber Harvest	Approx. 100	T48N; R8W; Section 33
North Klamath	2008	Timber Harvest	326	T47N; R8W Sections 5, 7, and 19; T48N; R9W Sections 23 and 25
Hungry Youth	2009	Timber Harvest	Approx 1,000	T48N; R8W; Sections 13, 24, 25, and 30
USFS	On-going	Grazing	Project area	Area wide
USFS	On-going	Recreation	Project area	Area wide
USFS	On-going	Plantation thinning	unknown	Unknown

[1] Data in this column represent total acres of the action not acres of NSO habitat impacted by these projects.

Table 4. Cumulative acres of suitable habitat removed/downgraded (alternative 2) within core areas and home ranges of NSOs located within 1.3 miles of the Mt. Ashland Habitat Restoration and Fuels Reduction Project stands.

Activity Center #	Name	Pre-treatment Core (0–0.7mi)			Pre-treatment Home Range (0–1.3 mi)			Cumulative Habitat Removed/downgraded Core (0–0.7mi)		Cumulative Habitat Removed/ downgraded Home Range (0–1.3mi)	
		NR	F	Total	NR	F	Total	NR	F	NR	F
KL1167 (SK102)	Deer Cr.	34	405	439	400	1197	1597	0	0	0	14.5
KL1169 (SK291)	N. Hungry Cr.	115	658	773	272	1834	2106	0	0	0	56
KL1176 (SK041)	S. Cottonwood Cr.	69	610	679	319	1499	1818	0	0	0	5
KL1178 (SK220)	Grouse Cr.	16	291	307	45	712	757	0	0.5	0	0.7
KL1180 (SK101)	Cow Cr./Long John Cr.	23	210	233	154	638	792	0	0.5	0	2.5
KL1185 (SK307)	Upper Grouse Cr.	79	209	288	85	489	574	0	0	0	0
KL1188 (SK308)	W. Branch Long John	15	122	137	26	370	396	0	0	0	4
KL1189	Long John	2	127	129	14	522	536	0	0	0	6
KL 1190	Lower Cow Cr.	121	240	361	303	715	1018	0	0	0	10
KL1267 (SK449)	Fly Stain Cr.	256	456	712	395	1622	2017	0	0.5	0	25.5
KL1297 (SK320)	N. Cottonwood Cr.	138	161	299	390	776	1166	0	0	0	0
KL1310 (SK501)	Lower Grouse Cr.	2	191	193	111	1129	1240	0	0.2	0	1.2
KL1311 (SK529)	W. Fork Big Red Mtn.	151	83	234	595	373	968	0	0	0	2

Table 5. Acres of suitable habitat pre- and post-treatment (preferred alternative) within core areas and home ranges of NSOs located within 1.3 miles of the Mt. Ashland Habitat Restoration and Fuels Reduction Project stands.

Activity Center #	Name	Pre-treatment Core (0–0.7mi)			Pre-treatment Home Range (0–1.3 mi)			Habitat Removed/downgraded Core (0–0.7mi)		Habitat Removed/ downgraded Home Range (0–1.3mi)	
		NR	F	Total	NR	F	Total	NR	F	NR	F
KL1167 (SK102)	Deer Cr.	34	405	439	390	1222	1612	0	0	0	0.5
KL1169 (SK291)	N. Hungry Cr.	115	659	774	276	1831	2107	0	0	0	1
KL1176 (SK041)	S. Cottonwood Cr.	69	610	679	319	1499	1818	0	0	0	0
KL1178 (SK220)	Grouse Cr.	16	295	311	45	722	767	0	0.5	0	0.5
KL1180 (SK101)	Cow Cr./Long John Cr.	23	211	234	154	671	825	0	0.5	0	2.25
KL1185 (SK307)	Upper Grouse Cr.	79	209	288	85	489	574	0	0	0	0
KL1188 (SK308)	W. Branch Long John	15	135	150	26	384	410	0	0	0	0.5
KL1189	Long John	2	130	132	17	547	564	0	0.5	0	2
KL 1190	Lower Cow Cr.	121	240	361	303	715	1018	0	0	0	.75
KL1267 (SK449)	Fly Stain Cr.	256	460	716	400	1634	2034	0	0.5	0	0.5
KL1297 (SK320)	N. Cottonwood Cr.	138	161	299	390	776	1166	0	0	0	0
KL1310 (SK501)	Lower Grouse Cr.	7	193	200	116	1149	1265	0	0	0	1.5
KL1311 (SK529)	W. Fork Big Red Mtn.	151	85	236	595	390	985	0	0	0	1.25